

1. A method of operating a computer telephony integration (CTI) system comprising a switch, and a CTI controller therefor, and a plurality of user workstations, each workstation comprising a computer connected to the CTI controller and a telephone connected to the switch, the method comprising the steps of:-

storing, for users of the system, respective user-associated profiles, each including a user-associated workgroup containing identities of users of the system, in whose telephony status the user associated with that workgroup is interested;

responding to receipt of an incoming call at the switch by retrieving from signalling data of that incoming call a called user identity and a caller identity;

retrieving from the profile corresponding to the retrieved called user identity a value for the length of time that the incoming call is to be allowed to remain unanswered before routing the call to an answering facility;

starting a call-associated countdown from said value;

sending incoming call details including at least said called user identity from the CTI controller to each computer at which a user, whose workgroup contains that called user identity, is currently logged on to the CTI controller, such computer being referred to hereinafter as an active computer;

responding to receipt of said incoming call details at said active computers by displaying an indication that an incoming call has been received for the called user; and

responding to a request, made by a user at a said active computer, for details of that incoming call, by displaying at that active computer details of that incoming call comprising the current value of said call-associated countdown and at least said caller identity, such a user being referred to hereinafter as a previewing user.

2. A method as claimed in claim 1, wherein said call-associated countdown is performed by the CTI controller, and wherein the step of responding to a said

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request comprises a substep of requesting from the CTI controller the current value of said call-associated countdown, and including the steps of sending the requested current value to the computer of the previewing user in response to the request for said current value, and starting in that computer a call-associated
5 countdown from the current value received thereat.

3. A method as claimed in claim 1, wherein the step of sending incoming call details to each active computer includes sending said retrieved value, and wherein each said active computer performs a respective call-associated countdown.

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4. (Amended) A method as claimed in [any one of claims 1 to 3] claim 1,
including the steps of:-

maintaining, for said incoming call, a respective call-associated previewing user list by adding to that list the identity of a previewing user upon the making of said request and deleting from that list the identity of a previewing user upon receipt of a message indicating that that previewing user has ceased to preview the details of that
incoming call;

upon each change in the content of said previewing user list, sending the latest previewing user list, from the CTI controller to each active computer; and

while displaying the details of said incoming call at a said active computer, additionally displaying the latest received previewing user list.

5. A method as claimed in claim 4, including the steps of starting, in each respective active computer, a respective preview duration measurement for each new previewing user in the latest received previewing user list, and, while
25 displaying the latest received previewing user list, additionally displaying, for each displayed previewing user, the current value of the respective preview duration measurement.

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6. (Amended) A method as claimed in [any one of claims 1 to 5] claim 1, wherein the step of sending incoming call details to each active computer includes sending a caller identity.

7. (Amended) A method as claimed in [any one of claims 1 to 5] claim 1, wherein the step of responding to a said request comprises a substep of requesting from the CTI controller the caller identity of that incoming call, and including the step of sending the requested caller identity to the computer of the previewing user in response to the request for said caller identity.

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8. A method of operating a computer telephony integration (CTI) system comprising a switch and a CTI controller therefor, and a plurality of user workstations, each workstation comprising a computer connected to the CTI controller and a telephone connected to the switch, the method comprising the steps of:

storing, for users of the system, respective user-associated profiles, each including a user-associated workgroup containing identities of users of the system, in whose telephony status the user associated with that workgroup is interested;

15 responding to receipt of an incoming call at the switch by retrieving from signalling data of that incoming call a called user identity and a calling line indication;

20 sending incoming call details, including at least said called user identity and said calling line indication, from the CTI controller to each computer at which a user, whose workgroup list contains that called user identity, is currently logged on to the CTI controller, such computer being referred to hereinafter as an active computer;

25 responding to receipt of said incoming call details at said active computers by displaying an indication that an incoming call has been received for the called user;

answering said incoming call;

sending an indication that the incoming call has been answered, from the CTI controller to said active computers, and in response converting the display thereof to an indication that the incoming call has been answered;

30 responding to a request, made by a user at a said active computer, for details of that answered call, by displaying at that active computer details of that answered call comprising at least said calling line indication, such a user being referred to hereinafter as an interrogating user.

9. A method as claimed in claim 8, wherein the step of responding to a said request comprises a substep of requesting from the CTI controller the caller identity of that answered call, and including the step of sending the requested
5 caller identity to the computer of the interrogating user in response to the request for said caller identity.

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10. A method as claimed in (either claim 8 or claim 9) claim 8, including the step of further responding to the answering of the incoming call by starting a call-associated call duration measurement; and wherein the response to receipt of said request includes additionally displaying the current value of said call duration measurement.

11. A method as claimed in claim 10, wherein said call duration measurement is performed by the CTI controller, and wherein the step of responding to a said request comprises a substep of requesting from the CTI controller the current value of said call duration measurement, and including the steps of sending the requested current value to the computer of the interrogating user in response to the request for said current value, and starting in that computer a call-associated timer from the current value received thereof.

12. A method as claimed in claim 10, wherein each said active computer starts a respective call-associated timer upon receipt of the indication that the incoming call has been answered.

13. (Amended) A method as claimed in (any one of claims 8 to 12) claim 8, including the steps of:-

maintaining at the CTI controller, for said answered incoming call, a respective call-associated interrogating user list by adding to that list the identity of an interrogating user upon the making of said request and deleting from that list the identity of an interrogating user upon receipt of a message indicating that that interrogating user has ceased to interrogate the details of that answered call;

upon each change in the content of said interrogating user list, sending the current interrogating user list from the CTI controller to each active computer; and

while displaying the details of said answered incoming call at a said active computer, additionally displaying the latest received interrogating user list.

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14. A method as claimed in claim 13, including the steps of timing for each
5 interrogating user the respective interrogation duration; and, while displaying the
latest received list of interrogating users, additionally displaying, for each displayed
interrogating user, the current value of the respective interrogation duration.

15. A method as claimed in claim 14, wherein each active computer performs
10 said step of timing for each interrogating user the respective interrogation duration.

16. (Amended) A method as claimed in [any one of claims 1 to 15] claim 1,
including the steps of:-

accessing a caller identity-to-name translation table in accordance with the
retrieved caller identity; and,

if a corresponding caller name is retrieved, displaying the retrieved caller name in
conjunction with said caller identity,

else, displaying in conjunction with said caller identity an indication that the caller
is unknown.

17. (Amended) A method as claimed in [any one of claims 1 to 15] claim 1,
including the steps of accessing, in accordance with the retrieved caller identity, a called
user-associated caller identity-to-informal name translation table; and,

if a corresponding personal name is retrieved, displaying the retrieved informal
name in conjunction with said caller identity.

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18. A method as claimed in claim 17, including, when a corresponding informal name is not retrieved, the steps of:

accessing a system-associated caller identity-to-formal name translation table in accordance with the retrieved caller identity; and,

if a corresponding formal caller name is retrieved, displaying the retrieved formal caller name in conjunction with said caller identity,

else, displaying in conjunction with said caller identity an indication that the caller is unknown.

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19. A method as claimed in claim 17, including the step of downloading a user's caller identity-to-informal name translation table from the CTI controller upon log on of that user to the CTI controller, and wherein the step of accessing a caller
5 identity-to-informal name translation table associated with the called user is performed by the respective user active computer.

20. A method as claimed in claim 19, including the steps of:-
accessing, in the CTI controller, a system-associated caller identity-to-
10 formal name translation table in accordance with the retrieved caller identity; and,
if a corresponding caller name is retrieved, sending the retrieved formal caller name from the CTI controller to each active computer for display in conjunction with said caller identity,
else, sending from the CTI controller to each active computer, for display
15 in conjunction with said caller identity, an indication that the caller is unknown.

21. A computer telephony integration (CTI) system comprising a switch and a CTI controller therefor, and a plurality of user workstations, each workstation comprising a computer connected to the CTI controller and a telephone connected
20 to the switch, in which system the CTI controller is arranged:-

to store, for users of the system, respective user-associated profiles, each profile being arranged to include a user-associated workgroup for containing identities of users of the system, in whose telephony status the user associated with that workgroup is interested, and being arranged to
25 store a value for the length of time that an incoming call is to be allowed to remain unanswered before routing the call to an answering facility;

to respond to receipt of an incoming call at the switch by retrieving from signalling data of that incoming call a called user identity and a caller identity; and

30 to retrieve from the profile corresponding to the retrieved called user identity a said value;

to send incoming call details including at least said called user identity to each computer at which a user, whose workgroup contains that

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called user identity, is currently logged on to the CTI controller, such computer being referred to hereinafter as an active computer; and each active computer being responsive to receipt of said incoming call details at said active computers to display an indication that an incoming call has been received for the called user; and the system further comprising

means for performing a call-associated countdown starting from said value;

means responsive to a request, made by a user at a said active computer, for details of that incoming call, to display at that active computer details of that incoming call comprising the current value of said call-associated countdown and at least said caller identity, such a user being referred to hereinafter as a previewing user.

22. A system as claimed in claim 21, wherein the CTI controller constitutes said means for performing a call-associated countdown and is responsive to a request for said current value to send the requested current value to the computer of the previewing user, and wherein each computer constitutes a respective means responsive to a request for details of that incoming call and is arranged to request from the CTI controller the current value of said call-associated countdown and to start a call-associated countdown from the current value received thereat.

23. A system as claimed in claim 21, wherein the CTI controller is arranged to send said retrieved value to each active computer as part of the incoming call details; and wherein each computer constitutes a respective means for performing a call-associated countdown starting from said value, and a respective means responsive to a request, and is arranged additionally to display the current value of said call-associated countdown.

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FIG. 1

FIG. 2

24. (Amended) A system as claimed in [any one of claims 21 to 23] claim 21, wherein the CTI controller is arranged to maintain, for said incoming call, a respective call-associated previewing user list by adding to that list the identity of a previewing user upon the making of said request and deleting from that list the identity of a previewing user upon receipt of a message indicating that that previewing user has ceased to preview the details of that incoming call, and to send to each active computer, upon each change in the content of said previewing user list, the latest previewing user list; and wherein said means responsive to a request for details of that incoming call is arranged, while displaying the details of said incoming call at a said active computer, additionally to display the latest received previewing user list.

FIG. 3

25. A system as claimed in claim 24, wherein each computer is arranged to start a respective countup timer for each new previewing user in the latest received previewing user list, and, while displaying the latest received previewing user list, additionally to display, for each displayed previewing user, the current value in the respective countup timer.

26. (Amended) A system as claimed in [any one of claims 21 to 25] claim 21, wherein the CTI controller is arranged to send a caller identity in conjunction with said called user identity

FIG. 4

27. (Amended) A system as claimed in [any one of claims 21 to 25] claim 21, wherein the means responsive to a request for details of that incoming call is constituted by the CTI controller together with respective means at the active computers arranged to request from the CTI controller the caller identity of that incoming call, the CTI controller being responsive to the request for said caller identity to send the requested caller identity to the computer of the previewing user.

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28. A computer telephony integration (CTI) system comprising a switch and a CTI controller therefor, and a plurality of user workstations, each workstation comprising a computer connected to the CTI controller and a telephone connected to the switch, in which system:-

30 the CTI controller is arranged

to store, for users of the system, respective user-associated profiles, each including a user-associated workgroup containing identities of users of

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the system, in whose telephony status the user associated with that workgroup is interested;

to respond to receipt of an incoming call at the switch by retrieving from signalling data of that incoming call a called user identity and a caller identity;

to send incoming call details, including at least said called user identity and said caller identity, to each computer at which a user, whose workgroup contains that called user identity, is currently logged on to the CTI controller, such computer being referred to hereinafter as an active computer; and

to respond to answering of said incoming call by sending an indication that the incoming call has been answered to said active computers;

each computer is arranged, when active,

to respond to receipt of said incoming call details by displaying an indication that an incoming call has been received for the called user, and

to respond to receipt of the indication that the incoming call has been answered by converting the display thereof to an indication that the incoming call has been answered; and

there is provided

means responsive to a request, made by a user at a said active computer, for details of that answered call, to display at that active computer details of that answered call comprising at least said caller identity, such a user being referred to hereinafter as an interrogating user.

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29. A system as claimed in claim 28, wherein the means responsive to a request for details of that answered call is constituted by the CTI controller together with respective means at the computers arranged to request from the CTI controller the caller identity of that incoming call, the CTI controller being responsive to the request for said caller identity to send the requested caller identity to the computer of the interrogating user.

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30. (Amended)

30. (Amended) A system as claimed in [either claim 28 or claim 29] claim 28, including means for responding to the answering of the incoming call by starting a call-associated call duration measurement; and wherein the means responsive to a request for details of that answered call is arranged additionally to display the current value of said call duration measurement.

31. A system as claimed in claim 30, wherein said means for responding to the answering of the incoming call is constituted by the CTI controller; and wherein the means responsive to a request for details of that answered call is additionally arranged to request from the CTI controller the current value of said call duration measurement, to associate a timer with that answered call and to start that timer from the current value received from the CTI controller.

32. A system as claimed in claim 30, wherein each computer constitutes
a respective said means for responding to the answering of the incoming call by starting a call-associated call duration measurement and is arranged to start a respective call-associated timer upon receipt of the indication that the incoming call has been answered, and
a respective said means responsive to a request for details of that answered call, to display at that active computer details of that answered call, and
is arranged additionally to display the current value of said call duration measurement.

33. (Amended) A system as claimed in [any one of claims 28 to 32] claim 28, wherein the CTI controller is arranged to maintain, for said answered incoming call, a respective call-associated interrogating user list by adding to that list the identity of an interrogating user upon the making of said request and deleting from that list the identity of an interrogating user upon receipt of a message indicating that that interrogating user has ceased to interrogate the details of that answered call; and to send to each active

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computer, upon each change in the content of said interrogating user list, the latest
interrogating user list; and wherein said means responsive to a request for details of
that answered call is arranged, while displaying the details of said answered call at a
said active computer, additionally to display the latest received interrogating user list.

34. A system as claimed in claim 33, including means for timing for each
5 interrogating user the respective interrogation duration; and wherein the means
responsive to a request is arranged additionally to display, for each displayed
interrogating user, the current value of the respective interrogation duration.

35. A system as claimed in claim 34, wherein each active computer
0 constitutes a respective means for timing for each interrogating user the respective
interrogation duration.

36. (Amended) A system as claimed in [any one of claims 21 to 35] claim 21,
including caller identity-to-name translation means responsive to the retrieved caller
identity to provide a translation result, and wherein the means responsive to a request is
arranged to display the translation result in conjunction with said caller identity.

37. A system as claimed in claim 36, wherein the caller identity-to-name translation means includes a system-associated caller identity-to-formal name
20 translation table and respective user-associated caller identity-to-informal name translation tables.

38. A system as claimed in claim 37, wherein the caller identity-to-name translation means is arranged to access the system-associated caller identity-to-
25 formal name translation table only in the event that accessing the caller identity-to-informal name translation table associated with the called user fails to retrieve a corresponding informal name.

39. A system as claimed in claim 37, wherein the CTI controller is responsive
30 to log on of a user to the CTI controller to download that user's caller identity-to-informal name translation table to the computer at which that log on is performed, and wherein that user's computer constitutes part of said caller identity-to-name translation means.

40. A system as claimed in claim 39, wherein the system-associated caller identity-to-formal name translation table is disposed at the CTI controller, and the caller identity-to-name translation means is responsive to the retrieved caller
5 identity to access the system-associated caller identity-to-formal name translation table and provide a translation result in the form of either a retrieved corresponding caller name or an indication that the caller is unknown, and is arranged to send the translation result from the CTI controller to each active computer for display in conjunction with said caller identity.

41-44 (cancelled).

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